

LORD® 3170 Epoxy Adhesive

Description

LORD® 3170 adhesive is an equal-mix, two-component epoxy structural adhesive system used to bond metals, glass, reinforced plastics, ceramics and foam materials for cryogenic applications. This adhesive system can be either room temperature cured or heat cured for faster processing.

Features and Benefits

Durable in Cold Environments – provides high strength for applications where the bonded assembly is exposed to cryogenic temperatures.

Minimal Outgassing – provides minimal outgassing suitable for aerospace applications.

Application

Surface Preparation – Remove soil, grease, oil, fingerprints, dust, mold release agents, rust and other contaminants from the surfaces to be bonded by solvent degreasing or alkaline cleaning.

Etch aluminum alloys with a sodium dichromate-sulfuric acid to obtain optimum mechanical strength.

Handle prepared surfaces carefully to avoid contamination. Assemble as soon as possible.

Mixing – Thoroughly mix equal parts of the resin and hardener, by volume, until uniform in color and consistency. Be careful not to whip excessive air into the adhesive system. Handheld cartridges will automatically dispense the correct volumetric ratio of each component.

Heat buildup due to an exothermic reaction between the two components will shorten the working time of the adhesive. Mixing smaller quantities will minimize heat buildup. Do not use any adhesive that has begun to cure.

Applying – Apply the mixed adhesive to bond surfaces using handheld cartridges or any convenient tool such as a stiff brush, spatula or trowel. For general use, a film thickness of approximately 0.002-0.003 inch (0.05-0.07 mm) is recommended. When bonding foam insulation materials to solid substrates, apply the mixed adhesive to a film thickness of 0.01 inch (0.25 mm).

Join the parts in such a way as to avoid entrapped air. Apply only enough pressure to ensure good wetting of the adhesive on both surfaces. Squeezing a little adhesive out at the edges is usually a sign of proper assembly. It is not necessary to clamp the assembly unless movement during adhesive cure is likely.

Typical Properties*

	3170-A Resin	3170-B Hardener
Appearance	Milky White Liquid	Amber Liquid
Viscosity, cP @ 77°F (25°C)	30,000-70,000	90,000-170,000
Density		
lb/gal	9.5	8.1
(kg/m ³)	(1138)	(971)
Flash Point (Closed Cup), °F (°C)	>482 (>250)	>482 (>250)

*Data is typical and not to be used for specification purposes.

LORD TECHNICAL DATA

Maximum adhesion will occur only with parts which mate well without the need for excessive clamping pressure during cure. Excessive clamping may squeeze too much adhesive from the bond area which can result in a poor bond.

Curing – LORD 3170 adhesive will cure to full strength in 4 days at 75°F (24°C). Cure rate can be accelerated by applying elevated temperatures. Mechanical properties and bond strength are improved with a postbake cure of 1 hour at 212°F (100°C).

Cleanup – Clean excess adhesive on the bonded assembly, as well as the equipment, prior to the adhesive cure with hot water and detergent or an organic solvent such as ketones. Once adhesive has cured, heat the adhesive to 400°F (204°C) or above to soften the cured adhesive. This allows the parts to be separated and the adhesive to be more easily removed. Some success may be achieved with commercial epoxy strippers.

Shelf Life/Storage

Shelf life is two years from date of manufacture when stored at 70-95°F (21-35°C) in original, unopened container.

Cautionary Information

Before using this or any LORD product, refer to the Material Safety Data Sheet (MSDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Typical Properties* of Resin Mixed with Hardener

Mix Ratio by Volume, Resin to Hardener	1:1
Solids Content, %	100
Working Time, hr @ 75°F (24°C)	2
Time to Handling Strength, hr	24
Mixed Appearance	Light Amber Paste
Cured Appearance	Yellow to Honey-colored

*Data is typical and not to be used for specification purposes.

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

Information provided herein is based upon tests believed to be reliable. In as much as LORD Corporation has no control over the manner in which others may use this information, it does not guarantee the results to be obtained. In addition, LORD Corporation does not guarantee the performance of the product or the results obtained from the use of the product or this information where the product has been repackaged by any third party, including but not limited to any product end-user. Nor does the company make any express or implied warranty of merchantability or fitness for a particular purpose concerning the effects or results of such use.

LORD and "Ask Us How" are trademarks of LORD Corporation or one of its subsidiaries.

LORD provides valuable expertise in adhesives and coatings, vibration and motion control, and magnetically responsive technologies. Our people work in collaboration with our customers to help them increase the value of their products. Innovative and responsive in an ever-changing marketplace, we are focused on providing solutions for our customers worldwide ... Ask Us How.

LORD Corporation World Headquarters

111 Lord Drive
Cary, NC 27511-7923
USA

Customer Support Center (in United States & Canada)

+1 877 ASK LORD (275 5673)

www.lord.com

For a listing of our worldwide locations, visit LORD.com.

©2011 LORD Corporation OD DS3376 (Rev.5 10/11)

LORD
AskUsHow™